GV435
.H32

188

Hastings, William Walter.

GV 435
H32
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C.

*No.*_____

The Measurements & Anthropometric Table

*Of*_____

EXPLANATION

1 The table on the other side of this sheet shows how you compare with others of the *same age*.

2 There are five different sections to this table for five different typical ages. Your measurements are plotted in the section which corresponds to your age. Reckon to nearest birthday.

3 If you are of medium height and well developed in every particular, the line across the table, which joins the dots showing development of individual qualities, will follow closely the black figures of the 50% column. The better your measurements are, the more nearly straight will be this line which represents them. If tall or short this table shows how you compare in each quality with the type for your age.

4 In each section the line of figures opposite 75 represents the 75% line, opposite M represents the mean or normal, and opposite 25 represents the 25% line. Should the line representing your measurements vary above the 75% line or below the 25% line of figures for any measurement, your development in this particular is abnormal. When it is below the 25% line, it may be necessary for you to take special corrective exercises. The physical director will point out any special lack under "Defects", and tell you how to correct it under "Prescription of Exercise."

5 If your Vitality Coefficient (V. C.) is very low, you require plenty of out-of-door exercise. Take only such corrective gymnastics and games as the physical director or your family physician may encourage.

HEALTH HINTS

(*Emphasize the hints checked* [√] *by the physical director.*)

"The first requisite to success in life is to be a good animal." Health, strength and vitality do not come by chance but by obedience to natural laws. Study health.

1 Take special breathing exercises for from five to ten minutes out of doors or before an open window upon rising, before retiring and during exercise. Ventilate your room day and night. Cover well and sleep with windows open, even in winter.

2 Eat regularly, lightly, slowly of plain *food*, using plenty of grain and fruits. Use variety in different meals, avoid unwholesome mixtures at the same meal. Stimulants are unnatural and unnecessary.

3 Drink freely of pure *water* between meals. Take a glass or more of cool water upon rising and retiring. Have a regular hour for evacuation.

4 The best time to *bathe* is immediately after moderate exercise. Do not cool off before bathing. The more frequent the bath, the shorter it should be. Rub vigorously after a cool bath, secure a fine glow becoming thoroughly alive. Use a graded bath, beginning with warm and finishing with a cool dash.

Never take a cold bath when exhausted, out of breath, within two hours after a full meal or just before such a meal. Wait about ten minutes after a bath before going out of doors.

5 Do not wear a tight belt or tight *clothing*, especially during exercise. It restricts circulation. Adapt weight of clothing to the season and the weather.

6 Rest is as essential as food. Take eight hours or more of sleep.

7 Preserve your *eyesight*. Read only by a good light and let it fall over your left shoulder. Bathe the eyes frequently with clean, cool water.

8 *Exercise* regularly, vigorously with enthusiasm, viz.: Have a definite time for it, give it all your energy, enjoy it to the full.

Emphasize games and all out of door life. If necessary be a crank about some game or games which is approved as good for *you* by the physical director.

Avoid exercise forbidden by the director or your physician. Avoid exhausting feats of strength. Take no vigorous exercise within two hours after a full meal. Never exercise until exhausted.

As long as you are able to be about, you will profit by exercise. You require it as much as food. Adapt it to your need as you do the food

DEFECTS

Measurements *Posture, Deformity, etc.*

LC Control Number

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Apr. 8, 1905
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ANTHROPOME

for Boys Twelve to Sixte

PHYSICAL TYPE FOR EACH AGE AND VITALITY COEFFICIENTS

To transpose *centimetres* to inches.

The figures in *Italics* represent INCHES and POUNDS.

litres to cubic inches, multiply by 61.

kilogrammes to pounds multiply by 2.2;

Common and *Metric* Systems,

multiply by .3937;

EXPLANATIONS. All measurements are given in both the

AGE	TWELVE [12] YEARS					THIRTEEN [13] YEARS					FOU
PER CENTS	±D*	190..... Mo. Da. Hr	25	M 50	75	±D*	190..... Mo. Da. Hr	25	M 50	75	±D*	19 Mo
VITAL												
Weight	2 8 6 2		30 1 66 3	32 9 72 5	35 7 78 7	3 4 7 6		32 1 70 7	35 5 78 3	38 9 85 9	4 7 10 4	
Height	4 8 1 9		135 4 53 3	140 2 55 2	145 0 57 1	4 8 1 9		140 2 55 2	145 0 57 1	149 8 59 0	5 6 2 2	
Trunk Length (Episternal)	1 5 6		49 3 19 4	50 8 20 0	52 3 20 6	1 8 7		50 0 19 7	51 8 20 4	53 6 21 1	2 5 1 0	
†*Height Sitting*	2 3 9		71 1 28 0	73 4 28 9	75 7 29 8	2 3 9		72 9 28 7	75 2 29 6	77 5 30 5	2 8 1 1	
Breadth of Chest Expanded	1 0 4		22 6 8 9	23 6 9 3	24 6 9 7	1 0 4		23 6 9 3	24 6 9 7	25 6 10 1	1 8 5	
Expansion in Bd. of Chest	7 3		2 6 1 0	3 3 1 3	4 0 1 6	7 3		2 6 1 0	3 3 1 3	4 0 1 6	1 0 4	
Breadth of Waist	1 0 4		18 6 7 3	19 6 7 7	20 6 8 1	1 0 4		19 1 7 5	20 1 7 9	21 1 8 3	1 5 6	
Depth of Chest Expanded	1 0 4		16 3 6 4	17 3 6 8	18 3 7 2	1 0 4		16 8 6 6	17 8 7 0	18 8 7 4	1 0 4	
Expansion in Depth of Chest	5 2		1 5 6	2 0 8	2 5 1 0	5 2		1 8 7	2 3 9	2 8 1 1	8 3	
Depth of Abdomen	1 3 5		13 2 5 2	14 5 5 7	15 8 6 2	1 3 5		13 2 5 2	14 5 5 7	15 8 6 2	1 5 6	
Girth of Neck	1 0 4		26 2 10 3	27 2 10 7	28 2 11 1	1 3 5		20 9 10 6	28 2 11 1	29 5 11 6	1 5 6	
Girth of Chest, 9th Rib Exp.	3 3 1 3		62 2 24 5	65 5 25 8	68 8 27 1	3 8 1 5		64 3 25 3	68 1 26 8	71 9 28 3	4 0 1 6	
Expans. in Girth of Ch. 9th Rib	1 0 4		5 1 2 0	6 1 2 4	7 1 2 8	1 0 4		5 6 2 2	6 6 2 6	7 6 3 0	1 3 5	
Girth of Waist	2 3 9		36 6 22 3	38 9 23 2	61 2 24 1	3 8 1 5		57 2 22 5	61 0 24 0	64 8 25 5	3 0 1 2	
STRENGTHS												
Lung Capacity	17 10 40		1 81 110 40	1 98 120 80	2 15 131 20	25 15 40		1 95 118 80	2 20 134 20	2 45 149 60	33 20 20	
Shoulder Retractors	3 3 7 3		12 2 26 9	15 6 34 2	18 8 41 5	4 0 8 8		15 0 33 1	19 0 41 9	23 0 50 7	4 5 9 9	
Forearm, Right	2 8 6 1		16 6 36 7	19 4 42 8	22 2 48 9	4 1 9 0		18 6 41 0	22 7 50 0	26 8 59 0	4 2 9 2	
Forearm, Left	3 2 7 0		15 1 33 4	18 3 40 4	21 5 47 4	3 1 6 9		18 7 41 1	21 8 48 0	24 9 54 9	3 8 8 4	
SPECIAL												
Length of Head	5 2		18 0 7 1	18 5 7 3	19 0 7 5	5 2		18 3 7 2	18 8 7 4	19 3 7 6	5 2	
Breadth of Head	3 1		14 4 5 7	14 7 5 8	15 0 5 9	3 1		14 4 5 7	14 7 5 8	15 0 5 9	5 2	
Breadth of Shoulders	1 0 4		32 6 12 8	33 5 13 2	34 5 13 6	1 0 4		33 5 13 2	34 5 13 6	35 5 14 0	1 5 6	
Breadth of Hips	7 3		25 9 10 2	26 6 10 5	27 3 10 8	1 0 4		27 0 10 6	28 0 11 0	29 0 11 4	1 3 5	
Girth of Chest Expanded	3 0 1 2		68 9 27 1	71 9 28 3	74 9 29 5	3 6 1 4		69 0 27 2	72 6 28 6	76 2 30 0	4 0 1 6	
Expansion in Girth of Chest	1 0 4		6 1 2 4	7 1 2 8	8 1 3 2	1 3 5		6 3 2 5	7 6 3 0	8 9 3 5	1 8 5	
Girth of Right Forearm	1 0 4		18 3 7 2	19 3 7 6	20 3 8 0	1 0 4		18 8 7 4	19 8 7 8	20 8 8 2	1 3 5	
Girth of Left Forearm	1 0 4		18 3 7 2	19 3 7 6	20 3 8 0	1 0 4		18 6 7 3	19 6 7 7	20 6 8 1	1 3 5	
Girth of Right Arm, Contr'd	1 8 7		19 3 7 6	21 1 8 3	22 9 9 0	1 3 5		20 3 8 0	21 6 8 5	22 9 9 0	1 8 7	
Girth of Left Arm, Contr'd	1 5 6		19 1 7 5	20 6 8 1	22 1 8 7	1 3 5		19 8 7 8	21 1 8 3	22 4 8 8	1 8 7	
Girth of Right Thigh	1 8 7		36 3 14 3	38 1 15 0	39 9 15 7	3 0 1 2		38 7 15 2	41 7 16 4	44 7 17 6	2 0 8	
Girth of Left Thigh	2 0 8		35 9 14 1	37 9 14 9	39 9 15 7	2 0 8		39 4 15 5	41 4 16 3	43 4 17 1	2 8 1 1	
Girth of Right Calf	1 3 5		25 9 10 2	27 2 10 7	28 5 11 2	1 3 5		26 9 10 6	28 2 11 1	29 5 11 6	2 0 8	
Girth of Left Calf	1 5 6		25 4 10 0	26 9 10 6	28 4 11 2	1 8 5		26 7 10 5	28 0 11 0	29 3 11 5	2 0 8	
Strength of Back	18 6 30 0		43 1 95 0	56 7 125 0	70 3 155 0	18 1 40 0		52 2 115 0	70 3 155 0	88 4 195 0	20 4 45 0	
Strength of Legs	13 6 30 0		56 7 125 0	70 3 155 0	83 9 185 0	25 0 55 0		58 9 130 0	83 9 185 0	108 9 240 0	28 6 63 1	
COEFFICIENTS												
		R. H. C.	068	.086	105			R. H. C.	078	100	124	
		O. S. H. C.	104 55	115 92	127 97			O. S. H. C.	107 41	119 76	132 75	
		†O.S.H.C.$_2$	150 78	167 50	185 92			O. S. H. C.$_2$	156 61	173 87	191 90	
		V. C.	7 13	9 99	13 47			V. C.	8 36	11 99	16 50	
		†V. C.$_2$	10 28	14 43	19 50			V. C.$_2$	12 20	17 41	23 86	
		V. W. C.	237	304	377			V. W. C.	281	338	424	
		†V. W. C.$_2$	342	430	546			V. W. C.$_2$	389	490	613	

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NOTES. [*] In the columns headed ±D* are indicated the probable

[†] O. S. H. C.$_2$, V. C.$_2$, and V. W. C.$_2$ are Coefficients co
adapted for use where clothing is not removed.

Measurements of..... , Taken.....

RIC TABLE

-16] Years of Age

BASED ON THE MEASUREMENTS OF THREE THOUSAND BOYS

[14] YEARS				FIFTEEN [15] YEARS				SIXTEEN [16] YEARS			
5	M 50	75	190..... Mo. Da. Hr	±D*	190..... Mo. Da. Hr	25	M 50	75	190..... Mo. Da. Hr	±D*	190..... Mo. Da. Hr	25	M 50	75	190..... Mo. Da. Hr
0	39 7	44 4		7 1		39 7	46 8	53 9		5 3		47 5	52 8	58 1	
1	87 5	97 9		15 6		87 5	103 1	118 7		11 6		104 8	116 4	128 0	
5	151 1	156 7		6 6		151 6	158 2	164 8		5 3		158 2	163 5	168 8	
3	59 5	61 7		2 6		59 7	62 3	64 9		2 1		62 3	64 4	66 5	
1	53 6	56 1		3 0		52 9	55 9	58 9		3 0		56 1	59 1	62 1	
1	21 4	22 4		1 2		20 8	22 0	23 2		1 2		22 1	23 2	24 5	
2	78 0	80 6		4 0		77 5	81 5	85 5		3 3		81 8	85 1	88 4	
0	30 7	31 8		1 6		30 5	32 1	33 7		1 3		32 2	33 5	34 8	
1	25 4	26 7		1 3		24 6	25 9	27 2		1 3		25 9	27 2	28 5	
5	10 0	10 5		5		9 7	10 2	10 7		5		10 2	10 7	11 2	
6	3-6	4 6		1 0		2 6	3 6	4 6		1 0		2 6	3 6	4 6	
0	1 4	1 8		4		1 0	1 4	1 8		4		1 0	1 4	1 8	
6	21 1	22 8		1 8		20 8	22 1	23 4		1 5		21 6	23 1	24 6	
7	8 3	8 9		5		8 2	8 7	9 2		6		8 5	9 1	9 7	
3	18 3	19 3		1 8		17 7	19 0	20 3		1 0		18 8	19 8	20 8	
8	7 2	7 6		5		7 0	7 5	8 0		4		7 4	7 8	8 2	
8	2 6	3 4		8		1 8	2 6	3 4		8		2 0	2 8	3 6	
7	1 0	1 3		3		7	1 0	1 3		3		8	1 1	1 4	
7	15 2	16 7		1 8		14 5	16 3	18 1		1 8		15 2	17 0	18 8	
4	6 0	6 6		7		5 7	6 4	7 1		7		6 0	6 7	7 4	
2	29 7	31 2		1 5		29 5	31 0	32 5		1 3		31 2	32 5	33 8	
1	11 7	12 3		6		11 6	12 2	12 8		5		12 3	12 8	13 3	
3	69 3	73 3		3 8		69 1	72 9	76 7		3 8		72 4	76 2	80 0	
7	27 3	28 9		1 5		27 2	28 7	30 2		1 5		28 5	30 0	31 5	
6	8 9	8 2		1 3		5 6	6 9	8 2		1 3		5 8	7 1	8 4	
2	2 7	3 2		5		2 2	2 7	3 2		5		2 3	2 8	3 3	
8	63 8	66 8		3 0		63 8	66 8	69 8		2 5		66 1	68 6	71 1	
9	25 1	26 3		1 2		25 1	26 3	27 5		1 0		26 0	27 0	28 0	
10	2 43	2 76		42		2 40	2 82	3 24		43		2 88	3 31	3 74	
10	148 30	168 50		25 70		146 40	172 10	197 80		26 20		175 80	202 00	228 20	
5	22 0	26 5		5 0		23 2	28 2	33 2		5 3		25 0	30 3	35 6	
6	48 5	58 3		11 0		51 2	62 2	73 2		11 7		55 1	66 8	78 5	
2	26 4	30 6		6 5		24 9	31 4	37 9		7 2		28 9	36 1	43 3	
9	58 1	67 3		14 3		55 0	69 3	83 6		15 9		63 6	79 5	95 4	
2	24 0	27 8		5 9		21 3	27 2	33 1		6 8		26 3	33 1	39 9	
6	53 0	61 4		13 0		47 0	60 0	73 0		15 0		58 0	73 0	88 0	
3	18 8	19 3		5		18 5	19 0	19 5		5		18 8	19 3	19 8	
2	7 4	7 6		2		7 3	7 5	7 7		2		7 4	7 6	7 8	
2	14 7	15 2		5		14 5	15 0	15 5		5		14 5	15 0	15 5	
0	5 8	6 0		2		5 7	5 9	6 1		2		5 7	5 9	6 1	
3	35 8	37 3		1 8		35 5	37 3	39 1		2 0		36 9	38 9	40 9	
5	14 1	14 7		7		14 0	14 7	15 4		8		14 5	15 3	16 1	
4	28 7	30 0		1 5		28 0	29 5	31 0		1 5		29 0	30 5	32 0	
8	11 3	11 8		6		11 0	11 6	12 2		6		11 4	12 0	12 6	
0	77 0	81 0		3 3		78 0	81 3	84 6		3 8		80 8	84 6	88 4	
7	30 3	31 9		1 3		30 7	32 0	33 3		1 5		31 8	33 3	34 8	
8	8 1	9 4		1 3		6 8	8 1	9 4		1 5		6 8	8 3	9 8	
7	3 2	3 7		5		2 7	3 2	3 7		6		2 7	3 3	3 9	
3	20 6	21 9		1 5		22 1	23 6	25 1		1 3		22 6	23 9	25 2	
6	8 1	8 6		6		8 7	9 3	9 9		5		8 9	9 4	9 9	
8	20 1	21 4		1 8		20 6	22 4	24 2		1 5		21 6	23 1	24 6	
4	7 9	8 4		7		8 1	8 8	9 5		6		8 5	9 1	9 7	
6	23 4	25 2		1 8		22 9	24 6	26 4		1 8		24 6	26 4	28 2	
5	9 2	9 9		7		9 0	9 7	10 4		7		9 7	10 4	11 1	
1	22 9	24 7		1 8		22 3	24 1	25 9		1 5		24 2	25 7	27 2	
3	9 0	9 7		7		8 8	9 5	10 2		6		9 5	10 1	10 7	
5	44 5	46 5		2 5		44 0	46 5	49 0		2 3		46 2	48 5	50 8	
7	17 5	18 3		1 0		17 3	18 3	19 3		9		18 2	19 1	20 0	
9	43 7	46 5		2 5		44 0	46 5	49 0		2 5		45 8	48 3	50 8	
1	17 2	18 3		1 0		17 3	18 3	19 3		1 0		18 0	19 0	20 0	
0	30 0	32 0		1 8		29 4	31 2	33 0		1 8		31 2	33 0	34 8	
0	11 8	12 6		7		11 6	12 3	13 0		7		12 3	13 0	13 7	
0	30 0	32 0		1 8		29 7	31 5	33 3		1 8		31 2	33 0	34 8	
0	11 8	12 6		7		11 7	12 4	13 1		7		12 3	13 0	13 7	
2	81 8	102 0		22 7		74 8	97 5	120 2		25 0		92 9	117 9	142 9	
0	180 0	225 0		50 0		165 0	215 0	265 0		55 0		205 0	260 0	315 0	
8	109 9	137 5		30 8		109 8	140 8	171 4		34 4		124 4	158 8	192 2	
0	240 0	303 1		67 0		242 1	310 0	377 0		75 8		274 3	350 0	425 7	

081	111	144			R. H. C.	089	123	161			R. H. C.	106	144	186	
06	127 65	144 29			O. S. H. C.	120 41	138 76	158 38			O. S. H. C.	135 16	155 15	176 61	
90	185 75	207 81			O. S. H. $C._2$	176 41	202 31	229 91			O. S. H. $C._2$	197 08	223 41	250 82	
06	14 16	20 84			V. C.	10 68	17 07	25 53			V. C.	14 27	23 90	32 87	
33	20 61	30			V. $C._2$	15 64	24 88	37 06			V. $C._2$	20 81	32 11	46 70	
259	357	469			V. W. C.	269	365	474			V. W. C.	300	422	566	
381	510	676			V. W. $C._2$	394	532	668			V. W. $C._2$	438	608	812	

ons for each measurement.

the use of Sitting Height, instead of Trunk Length. These Coefficients are especially

FORM 3B

DIRECTIONS for PLOTTING. 1—Plot a given individual in the age-section indicated by his nearest birthday. 2—Place dots to left of figures. 3—Regard middle of spaces as 25, 50 and 75 per cent. lines. 4—The right-hand line of the two enclosing the 75 per cent. column may be regarded as the 90 per cent. line; the left hand line of the two enclosing the 25 per cent. column may be regarded as the 10 per cent. line. 5—In the column headed "D are indicated the *probable deviations* for each measurement. The *probable deviation* in this table is the deviation of the 25 per cent. or 75 per cent. line from the mean. 6—Should a measurement differ from the 75 per cent. line above or the 25 per cent. line below to the amount of the *probable deviation*, the point should be placed just outside the lines enclosing 75 per cent. and 25 per cent. grades to indicate extreme abnormality

Physical Director.

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*Date*_____

PRESCRIPTION OF EXERCISE

FOR

I Posture and Carriage _____

II Trunk Dimensions _____

III Organic Function _____

IV Injury, Atrophy, and Deformity _____

V Recreation _____

VI General Directions _____

II. Second Prescription *Date*_____

III. Third Prescription. *Date*_____

COEFFICIENTS

Chest expansion and height are in centimeters; lung capacity is in litres. If the lung capacity is in cubic inches, divide by 61 to reduce it to litres. If the other measurements are in inches, use a Seaver measuring rod to transpose into centimeters, or multiply by 2.54.

The formula for the Respiratory-Height Coefficient is:

$$\frac{\textit{Chest Expansion} \times \textit{Lung Capacity}}{\text{Height}}$$

This product of Chest Expansion and Lung Capacity divided by Height shows the amount of respiratory strength and function for each centimeter of height.

The Formula for the Organic Strength-Height Coefficient is:

$$\frac{\textit{Height Sitting} \times \tfrac{1}{2}\,(\textit{Breadth of Chest} + \textit{Breadth of Waist}) \times \textit{Depth of Trunk}}{\text{Height}}$$

The half sum of Breadth of Chest contracted and expanded is used for Breadth of Chest; the half sum of Depth of Chest contracted and expanded is used for Depth of Chest; the half sum of Depth of Chest and Abdomen is nsed for Depth of Trunk.

This coefficient represents the relative size and power of the vital organs of the trunk for each centimeter of height. It is approximately the ratio of the solid contents of the trunk to the height.

The Vitality Coefficient (V. C.) is the product,—R. H. C. x O. S. H. C.

It is the product of the total exhibition of respiratory strength by the total strength of the vital organs as indicated by their bulk. It is a merging of all the capacity for endurance into one. It is generally conceded that vitality varies in direct ratio with each one of the physical qualities used in the calculation of these coefficients, with lung capacity, chest expansion, height sitting, breadth of chest, breadth of waist and depth of chest; then the combination of all these qualities should produce a most satisfactory general index of vital strength and function.

The Vitality Coefficient calls attention to the fact that vitality is high, medium or low; the Respiratory-Height Coefficient indicates whether respiratory function is responsible for the condition; the Organic Strength-Height Coefficient whether trunk capacity is responsible; the graphical representation of development upon the table indicates the particular measurement or measurements which are responsible for the character of the coefficients, and shows where development is needed.

$$\frac{V.\,C.}{\text{Weight}}$$

The formula* for the Vital-Weight Coefficient is:

It shows the ratio of vital function to the body-bulk to be sustained; that is to say roughly, the relation of the purveying organs to the organism. Of two men of the same weight, the man with large trunk and good respiratory power should have the greater vitality.

*NOTE.—The formulas are based on the metric system. For formulas adapted to the common system see "Manual."

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Hollinger Corp.
pH 8.5